

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Appellant: Neil L. McClure	Confirmation No.: 6338
Application Serial No.: 10/074,839	Examiner: Karmelek, Alison L.
Filed: October 24, 2001	Group Art Unit: 3623
For: Equal Time Ballot Rotation	Attorney Docket No.: 392902

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**REPLY BRIEF TO EXAMINER'S ANSWER**

Dear Sir:

This Reply Brief is being submitted in response to the Examiner's Answer mailed on July 21, 2008, in accordance with 37 C.F.R. §41.41. Appellant incorporates the contents of the Appeal Brief filed June 11, 2008 into this Reply Brief.

**(1) Status of claims.**

Claim 1-46 were rejected in the last Office Action dated March 1, 2007 and are at issue in this appeal. Claims 1-46 are currently pending in the application and stand rejected as follows:

Claims 1-46 stand rejected under U.S.C. § 103(a) as being unpatentable over Openshaw II et al. (U.S. Patent Publication 2002/0107724) (“Openshaw”) in view of Miller et al. (*The impact of candidate name order on election outcomes*) (“Miller”). Appellant respectfully traverses this rejection and requests withdrawal of the same.

**(2) Grounds for rejections to be reviewed on appeal.**

Whether Claims 1-46 should be rejected under U.S.C. § 103(a) as being unpatentable over Openshaw II et al. (U.S. Patent Publication 2002/0107724) (“Openshaw”) in view of Miller et al. (*The impact of candidate name order on election outcomes*) (“Miller”).

(3) **Arguments.**

Claims 1-46 stand rejected under U.S.C. §103(a) as being unpatentable over Openshaw in view of Miller. Appellant respectfully traverses the rejections because substantial differences exist between the claimed invention and the cited references and that these differences are such that the claimed invention as a whole would not have been obvious to a person of ordinary skill in the art at the time the invention was made. All arguments advanced in the Appeal Brief filed on November 28, 2007 and the Supplemental Appeal Brief filed on June 11, 2008 are hereby expressly incorporated into this Reply Brief.

Obviousness is a question of law based on underlying factual inquiries. The factual inquiries enunciated by the U.S. Supreme Court in *KSR Int'l C. v. Teleflex, Inc.*, No 04-1350 (U.S. Apr. 30, 2007) include the *Graham* factors of determining the scope and content of the prior art, ascertaining the differences between the claimed invention and the prior art, and resolving the level of ordinary skill in the pertinent art.

Once the Graham factual inquiries are resolved, the Examiner must explain why the difference(s) between the cited references and the claimed invention would have been obvious to one of ordinary skill in the art. The rationale used must be a permissible rationale. The USPTO has promulgated examination guidelines for determining obviousness in view of KSR in M.P.E.P. §2143(A)-(G). These KSR Guidelines enumerate permissible rationales and the findings of fact that must be made under the particular rationale.

It appears from the Reply that the rationale used to support the rejection of claims 1-46 is the rationale enumerated in M.P.E.P. §2143(A) (i.e., Combining Prior Art Elements According to Known Methods to yield Predictable Results). Significantly, M.P.E.P. §2143(A)(1) requires a factual finding “*...that the prior art included each element claimed...*” Appellant respectfully submits that Openshaw and Miller, whether taken individually or in combination, fail to address each element of claim 1 because the rejection fails to show an election system that provides statistical fairness at the precinct level by a rotation process that generates a ballot on demand.

Appellant respectfully submits that the claimed invention is not obvious over the prior art because significant differences exist between the claimed invention and the prior art and that these differences are such that the claimed invention as a whole would not have been obvious to a person having ordinary skill in the art at the time the invention was made.

In the Examiner's Answer dated July 21, 2008, the Examiner has listed 7 specific arguments with detailed discussion. See Pages 14-15 of Examiner's Answer dated July 21, 2008. Appellant is responding to each of these 7 lines of reasoning in the following text.

**1. The methodology of Miller and Openshaw does not ensure substantial statistical fairness as presently claimed in claims 1, 24, 43.**

Openshaw does not mention any ballot rotating methods to ensure substantial statistical fairness, and the Examiner has indicated that Miller was relied upon to teach substantially equal statistical fairness by ballot rotation. *See* page 15, lines 7-8 of the Examiner's Answer. Although Miller does mention rotating the ballot, Miller's methods merely rotate the ballot between different precincts without regard to the different number of voters in each precinct. Thus, for elections encompassing multiple precincts or an entire jurisdiction, such as a state-wide election, because different precincts inherently have different numbers of voters, the approach described in Miller does not ensure that each candidate will appear in the first position for a substantially equal number of voters. Accordingly, the Examiner misinterprets Miller as producing substantially equal statistical fairness.

Moreover, Miller mentions developing a number of different name orders beginning with an alphabetical order of the candidates followed by rotation by moving the first-listed candidates to the end of the list. According to Miller, the series of name orders thus created are assigned to different precinct until every precinct has been assigned to a name order. *See* Miller, line 25 on page 298 to line 2 on page 299. Miller never contemplates how to balance the candidate rotation when the number of candidates differs from the number of precincts. For instance, if there are 5 candidates and there are

6 precincts (1-6), 5 name orders A-E, can be created, which are assigned to the 6 precincts. According to Miller, precinct 1 will get name order A, precinct 2 will get name order B, and so on, until precinct 5 gets name order E. With precinct 6 being the only precinct left, if name order A is assigned to precinct 6, name order A will have been assigned to two precincts while name orders B-E will only have been assigned to one precinct. Assuming each precinct has the same number of voters, name order A will be presented to twice as many voters than the number of voters whom are presented with name orders B, C, D or E. Appellant respectfully submits that such a methodology does NOT ensure statistical fairness in an election encompassing all 6 precincts.

The Miller methodology also fails to ensure statistical fairness for elections within one precinct. For instance, Miller does not address how to make sure that each candidate will appear in the first position for a substantially equal number of voters within one precinct. Indeed, Miller fails even to recognize the problem which is solved according to what is claimed.

Taken together, the system described in Openshaw and Miller cannot achieve statistical fairness as measured by each candidate being presented first in a substantially equal number of voting instances.

**2. Openshaw does not teach rotating the order of the candidates to ensure statistical fairness as per claims 1, 24, 43.**

The Examiner maintains that Openshaw teaches rotating the order of the candidates to ensure statistical fairness as claimed by Appellant in claims 1, 24, 43. Appellant disagrees. The Examiner cited paragraphs 19-20, 33-36 and 41 and stated that Openshaw teaches that a first ballot is presented and then another is presented by rotating using randomization. Nonetheless, the cited paragraphs do not teach or suggest rotating the ballot using randomization in the manner that is claimed.

Openshaw in paragraph 19 mentions that "voter selections are randomized to avoid the need of a secure voting booth as observers would not be able to detect the voters' preferences by observing the touchtone selections." However, that concept is implemented by a means other than what is claimed. In paragraph 20, Openshaw states

that the "computer automated voice is then transmitted through the phone speaker to identify the candidates unique to that precinct *in each category in a rotating random order* [emphasis added]." Accordingly, Openshaw teaches that the selections are rotated by randomization of the *category*, as opposed to rotation of the candidate names. For example, Openshaw may rotate the *categories* of president, senator, member of Congress, and bond initiative. This happens as opposed to rotating the options under each category, such as Nader, McCain, and Obama in the category of president. Thus, Openshaw does not teach rotation in the manner that is claimed and does so for a completely different purpose. Openshaw merely does this to protect the privacy of persons who may use a telephone to vote under observation, and does not accidentally do so in a manner that achieves equal fairness at the precinct level.

Even assuming, *arguendo*, that Openshaw identifies the candidates in a random order under each category, it is not clear whether it is the name order on the ballot, or the touchtone keys associated with each candidate name, that is randomized. Again, paragraph 19 teaches that the "voter selections are randomized to avoid the need of a secure voting booth as observers would not be able to detect the voters' preferences by observing the touchtone selections." The term "voter selections" is not defined and can be interpreted to mean the candidate names on the ballot, or the touchtone keys that a voter needs to push in order to make a candidate selection. Randomization of either the name order or the touchtone key selection can help achieve the objective of preventing observers from detecting the voters' preferences by observing the touchtone selections. Thus, it is pure speculation on the Examiner's part to state that Openshaw teaches rotating the candidate names on the ballot in the same manner as Appellant's invention.

### **3. Openshaw does not teach ballot rotation on demand as claimed in claims 1, 24, and 43.**

The Examiner maintains that because the ballot in Openshaw is only assigned to the voter after the voter registration number and access number have been received, the ballot in Openshaw is generated on demand. The Examiner has ignored the detailed description in paragraph 74 and Figure 4 of Openshaw. As shown in Fig. 4 of Openshaw,

the ballots are created and approved and entered into an election specific ballot database, which is then entered into the precinct computer terminals. Paragraph 74 of Openshaw. According to Openshaw, the precinct computer terminals then take in the voter registration number and assign a ballot to the voter. *Id.* Thus, the ballot in Openshaw is not generated on demand, rather, it is created and entered into the precinct computer terminals before the voter input of registration numbers. *Id.* Therefore, Openshaw works in a different way than what is claimed by the Appellant, namely, rotating the names on the ballot to ensure substantially statistical fairness.

The Examiner reasons that while Openshaw disclosed that the ballot is pre-approved, it does not state that the ballot order is pre-approved. The Examiner appears to be suggesting that the ballot order is generated after a voter's identification has been verified. This notion contradicts the teaching of Openshaw because, according to paragraph 74 of Openshaw, the ballots are stored in the computer terminals and no rotation of candidate order takes place in the computer terminals. Indeed, Figure 4 of Openshaw shows that the ballots are created, tested, approved and stored in a "Election Specific Ballot Database" before they are transmitted to the precinct computer. If the Examiner insists that the term "Ballot Creation" as used in Figure 4 does not really mean creation of the ballots to be presented to a voter, but only means placing the candidates' names on a ballot without any specific name order, Appellant respectfully request that the Examiner provide support for this notion. Indeed, no devices other than "Ballot Creation" in Figure 4 have been shown to perform the function of candidate name rotation as the Examiner seems to be suggesting. Because the ballot rotation is not performed after the input of voter registration number, the ballot rotation process can not be said to be performed on demand as is required by Claims 1, 24 and 43.

**4. Miller does not teach that ballot rotation may be performed to achieve statistical fairness at the level of one precinct, a group of precincts supported at a polling place, and an entire election jurisdiction, as presently claimed in claims 1, 24, 43.**

The Examiner stated that “claims 1, 24 and 43 do not recites achieving fairness as measured by each candidate being presented first in an equal number of voting instances.” Page 17 of the Examiner’s Answer dated July 21, 2008. Appellant admits that Claims 1, 24 and 43 merely recite that the ballot rotation is performed to ensure substantially equal statistical fairness. Thus, although mathematically equality is not required, statistical equality is called for by these claims.

Miller’s methods merely rotate the ballot between different precincts without regard to the different number of voters in each precinct. Thus, for elections encompassing multiple precincts or an entire jurisdiction, such as a state-wide election, because different precincts inherently have different numbers of voters, the approach described in Miller does not ensure that each candidate will appear in the first position for a substantially equal number of voters.

The Examiner cited Miller’s retrospective study to support the notion that Miller’s methodology can achieve substantially equal statistical fairness. See page 18 of the Examiner’s Answer dated July 21, 2008. Just because the different precincts within an Ohio County in 1992 happened to have substantially equal numbers of voters does not mean that the other hundreds of thousands of precincts across the nation will necessarily have substantially equal number of voters. Appellant’s invention teaches that the ballot rotation facilitates substantially equal statistical fairness as claimed in Claims 1, 24 and 43. By contrast, the Miller rotation does not facilitate substantially equal statistical fairness as illustrated in Item 1 on page 8 of this Reply Brief.

**5. Openshaw does not teach ballot rotation on demand as claimed in claims 1, 24, 43.**

This item appears to be redundant with Item 3 above. The Examiner is referred to Item 3 above on page 11 of this Brief.

**6. It would not have been obvious to modify Openshaw's system or Miller's ballot rotation technique to arrive at the present invention as claimed in claims 1, 24, 43.**

The Examiner stated that Appellant's invention merely combine old elements. See page 19 of the Examiner's Answer. Appellant disagrees. As explained above, significant differences exist between Appellant's claimed invention and the two cited references. These differences include, among others, that the ballot rotation is performed on demand to facilitate substantially equal statistical fairness. Thus, Appellant is not merely combining old elements, indeed, the claimed limitations of "ballot rotation on demand" and "facilitating substantially equal statistical fairness" are not disclosed in the cited references.

In fact, the present invention utilizes a ballot rotation engine having means for performing ballot rotation by generating electronically reconfigured ballot images on demand during the course of an election to implement the schema in a controlled manner facilitating substantially equal statistical fairness in rotation over at least one level selected from the group consisting of a voting precinct, a group of precincts supported at a polling place, and an entire election jurisdiction. As explained in the Specification, the ballot rotation engine performs the rotation to ensure substantially equal statistical fairness based on a number of factors, including, for example, the different name orders on paper ballots within the same precinct, or same county, etc. See page 10, line 6 to page 11, line 3 of the Specification. None of these factors were contemplated in the cited references, and the Examiner has not established why it would be obvious to design such an electronic voting system as is now claimed.

**7. Openshaw in view of Miller do not disclose or suggest the limitations of claims 2-23, 25-35, 39-42 and 44-46.**

Claims 2-23, 25-42 and 44-46 all depend directly or indirectly from claims 1, 24 or 43, respectively, and necessarily incorporate all limitations of their respective base claims. Because claims 1, 24 or 43 are not obvious over Openshaw in view of Miller,

Claims 2-23, 25-42 and 44-46 also are not obvious over Openshaw in view of Miller. Each dependent claims also recite limitations that are explained in details on pages 12-21 of the Supplemental Appeal Brief as filed June 11, 2008.

**CONCLUSION**

Appellant respectfully requests the Honorable Board of Patent Appeals and Interferences reverse the Examiner's rejections of Claims 1-46 under 35 U.S.C. § 103(a). Appellant respectfully solicits allowance of all of the claims appealed and pending in the instant application.

Other than the fees for this appeal brief, no further fees are deemed due in connection with this matter. However, the Commissioner is hereby authorized to charge any fees which may be due in this matter from Deposit Account Number 12-0600.

Respectfully submitted,

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